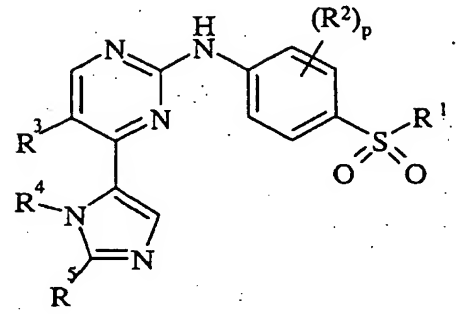
Claims

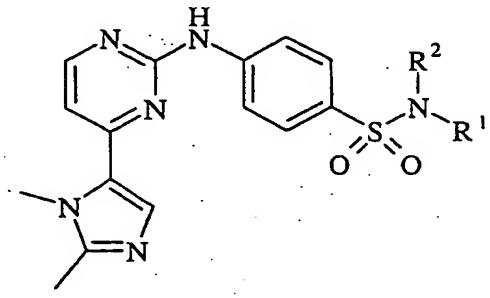
1. A compound of the formula **(IA)**, **(IB)**, **(IC)**, **(ID)**, **(IE)** and **(IF)** of the generic structure of formula **(I)**:



(I)

wherein:

i) a compound of formula **(IA)** is selected from:



(IA)

wherein:

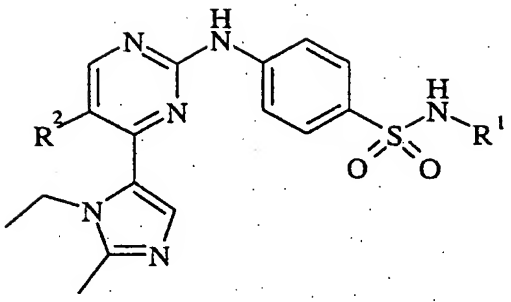
$\mathbf{R^1}$ is 2-(pyrazolyl-1-yl)ethyl, 3-(isoxazol-3-yloxy)propyl, 2-(isothiazol-3-yloxy)ethyl, 2-(thiadiazol-3-yloxy)ethyl, 1,3-dihydroxyprop-2-yl, 1-methyl-1-hydroxymethylethyl, 1,1-dimethylpropyl, 1-methylcyclopropyl, *t*-butyl, 2-morpholino-1,1-dimethylethyl, 2-pyrrolidin-1-yl-1,1-dimethylethyl, 2-methylthio-1,1-dimethylethyl, 1,3-dimethoxyprop-2-yl, 1-methoxyprop-2-yl, 1-hydroxyprop-2-yl, 1-ethoxyprop-2-yl, 1-propoxyprop-2-yl, ethoxyethyl or 2-methoxy-1,1-dimethylethyl; and

R^2 is hydrogen;

or R^1 and R^2 together form 2,2-dimethylaziridin-1-yl;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof;

ii) a compound of formula **(IB)** is selected from:



(IB)

wherein:

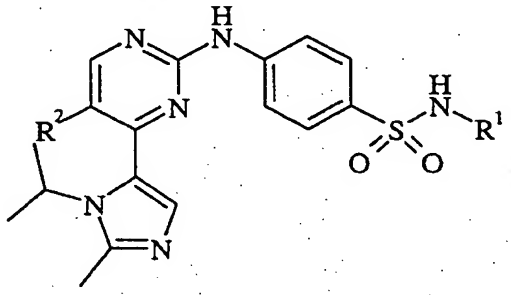
R^1 is pyrid-2-ylmethyl, 2-(2-methyl-1,2,4-triazol-5-yl)ethyl, 2-pyrid-2-ylethyl, 2-pyridazin-3-ylethyl, 2-(3,5-dimethyltriazol-4-yl)ethyl, 2-pyrid-3-ylethyl, 2-methoxyethyl, 3-(5-methylpyrazol4-yl)propyl, 2-trifluoromethylpyrid-5-ylmethyl, 2-pyridazin-4-ylethyl, 1,1-dimethylprop-2-ynyl, 2-ethoxyethyl, 2-phenoxyethyl, 2-(4-methoxyphenoxy)ethyl, 2-(2-methoxyphenoxy)ethyl, 2-(vinyloxy)ethyl, 2-(isopropoxy)ethyl and 2-(propoxy)ethyl; and

R^2 is hydrogen or cyano;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof;

provided that when R^1 is 2-methoxyethyl, R^2 is cyano;

iii) a compound of formula (IC) is selected from:



(IC)

wherein:

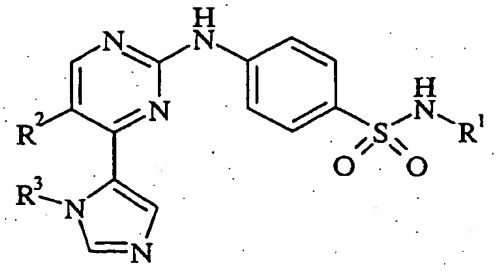
R^1 is hydrogen, heterocyclyl, C_{1-6}alkyl or C_{1-6}alkoxyC_{1-6}alkyl; wherein R^1 may be optionally substituted on carbon by one or more hydroxy, carboxy, C_{1-6}alkoxy, C_{1-6}alkoxycarbonyl, *N,N*-(C_{1-6}alkyl)$_2$amino, heterocyclyl, C_{3-6}cycloalkyl and C_{1-6}alkoxyC_{1-6}alkoxy; and wherein if a heterocyclyl contains an -NH- moiety, that nitrogen may be optionally substituted by C_{1-6}alkyl or benzyl;

R^2 is hydrogen, halo or cyano;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof;

provided that when R^1 is 2-methoxyethyl, cyclopropylmethyl or pyrid-2-ylmethyl, R^2 is not hydrogen;

iv) a compound of formula **(ID)** is selected from:



(ID)

wherein:

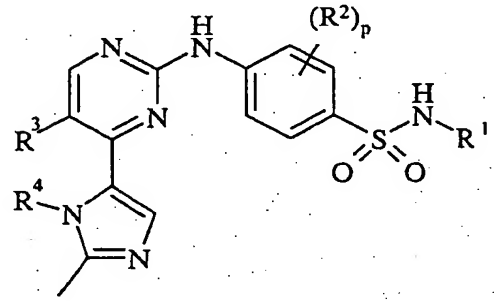
$\mathbf{R^1}$ is hydrogen, C_{1-4}alkyl, C_{2-4}alkenyl, C_{2-4}alkynyl, C_{3-6}cycloalkyl, C_{3-6}cycloalkylC_{1-3}alkyl, a heterocyclyl or heterocyclylC_{1-3}alkyl; wherein R^1 may be optionally substituted on carbon by one or more methyl, ethyl, methoxy, ethoxy, propoxy, trifluoromethyl, trifluoromethoxy, 2,2,2-trifluoroethoxy or cyclopropylmethoxy; and wherein if said heterocyclyl contains an -NH- moiety that nitrogen may be optionally substituted by one or more methyl, ethyl, acetyl, 2,2,2-trifluoroethyl or methoxyethyl;

$\mathbf{R^2}$ is hydrogen, halo or cyano;

$\mathbf{R^3}$ is C_{2-6}alkyl;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof;

v) a compound of formula **(IE)** is selected from:



(IE)

wherein:

$\mathbf{R^1}$ is hydrogen, C_{1-4}alkyl, C_{2-4}alkenyl, C_{2-4}alkynyl, C_{3-6}cycloalkyl, C_{3-6}cycloalkylC_{1-3}alkyl, a heterocyclyl or heterocyclylC_{1-3}alkyl; wherein R^1 may be optionally substituted on carbon by one or more methyl, ethyl, methoxy, ethoxy, propoxy,

trifluoromethyl, trifluoromethoxy, 2,2,2-trifluoroethoxy or cyclopropylmethoxy; and wherein if said heterocyclyl contains an -NH- moiety that nitrogen may be optionally substituted by one or more methyl, ethyl, acetyl, 2,2,2-trifluoroethyl or methoxyethyl;

R^2 is halo, cyano, C_{1-3}alkyl or C_{1-3}alkoxy;

p is 1-2; wherein the values of R^2 may be the same or different;

R^3 is hydrogen, halo or cyano;

R^4 is C_{1-4}alkyl;

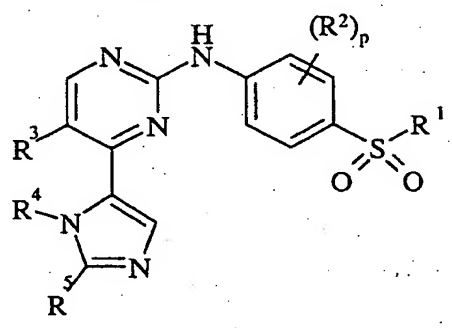
R^5 is C_{1-6}alkyl or C_{2-6}alkenyl; wherein R^5 may be optionally substituted on carbon by one or more methoxy, ethoxy, propoxy, trifluoromethyl, trifluoromethoxy, 2,2,2-trifluoroethoxy or cyclopropylmethoxy;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof;

provided that said compound is not

4-(1,2-dimethylimidazol-5-yl)-2-[2-methoxy-4-(*N*-methylsulphamoyl)-5-methylanilino]pyrimidine;

vi) a compound of formula (IF) is selected from:



(IF)

wherein:

R^1 is C_{1-4}alkyl, C_{2-4}alkenyl, C_{2-4}alkynyl, C_{3-6}cycloalkyl, C_{3-6}cycloalkylC_{1-3}alkyl, a heterocyclyl or heterocyclylC_{1-3}alkyl; wherein R^1 may be optionally substituted on carbon by one or more methyl, ethyl, methoxy, ethoxy, propoxy, trifluoromethyl, trifluoromethoxy, dimethylamino, 2,2,2-trifluoroethoxy, phenyl or cyclopropylmethoxy; and wherein if said heterocyclyl contains an -NH- moiety that nitrogen may be optionally substituted by one or more methyl, ethyl, acetyl, 2,2,2-trifluoroethyl or methoxyethyl;

R^2 is halo, cyano, C_{1-3}alkyl or C_{1-3}alkoxy;

p is 0-2; wherein the values of R^2 may be the same or different;

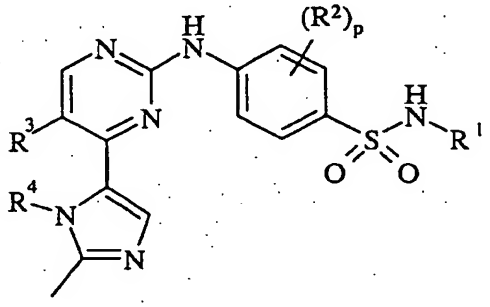
R^3 is hydrogen, halo or cyano;

R^4 is C_{2-6}alkyl;

R^5 is C_{1-6}alkyl or C_{2-6}alkenyl; wherein R^5 may be optionally substituted on carbon by one or more methoxy, ethoxy, propoxy, trifluoromethyl, trifluoromethoxy, 2,2,2-trifluoroethoxy or cyclopropylmethoxy;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof;

vii) a compound of formula (IG) is selected from:



(IG)

wherein:

R^1 is C_{1-4}alkyl, C_{2-4}alkenyl, C_{2-4}alkynyl, C_{3-6}cycloalkyl, C_{3-6}cycloalkylC_{1-3}alkyl, a heterocyclyl or heterocyclylC_{1-3}alkyl; wherein R^1 may be optionally substituted on carbon by one or more methyl, ethyl, methoxy, ethoxy, propoxy, trifluoromethyl, trifluoromethoxy, dimethylamino, 2,2,2-trifluoroethoxy, phenyl or cyclopropylmethoxy; and wherein if said heterocyclyl contains an -NH- moiety that nitrogen may be optionally substituted by one or more methyl, ethyl, acetyl, 2,2,2-trifluoroethyl or methoxyethyl;

R^2 is halo, cyano, C_{1-3}alkyl or C_{1-3}alkoxy;

p is 0-2; wherein the values of R^2 may be the same or different;

R^3 is hydrogen, halo or cyano;

R^4 is n-propyl or C_{4-6}alkyl;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

2. A compound of formula (I) according to claim 1 which is a compound of formula (IA), or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

3. A compound of formula (IA) selected from:

2-{4-[*N*-(2-ethoxyethyl)sulphamoyl]anilino}-4-(1,2-dimethylimidazol-5-yl)pyrimidine;

2-{4-[*N*-(*t*-butyl)sulphamoyl]anilino}-4-(1,2-dimethylimidazol-5-yl)pyrimidine;

2-{4-[*N*-(1-ethoxyprop-2-yl)sulphamoyl]anilino}-4-(1,2-dimethylimidazol-5-yl)pyrimidine;
2-{4-[*N*-(1-propoxyprop-2-yl)sulphamoyl]anilino}-4-(1,2-dimethylimidazol-5-yl)pyrimidine; and
2-{4-[*N*-(1-methylcyclopropyl)sulphamoyl]anilino}-4-(1,2-dimethylimidazol-5-yl)pyrimidine;
or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

4. A compound of formula (I) according to claim 1 which is a compound of formula (IB), or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

5. A compound of formula (IB) selected from:
4-(1-ethyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-ethoxyethyl)sulphamoyl]anilino}pyrimidine;
2-{4-[*N*-(2-isopropoxyethyl)sulphamoyl]anilino}-4-(1-ethyl-2-methylimidazol-5-yl)pyrimidine;
2-{4-[*N*-(2-propoxyethyl)sulphamoyl]anilino}-4-(1-ethyl-2-methylimidazol-5-yl)pyrimidine;
2-{4-[*N*-(1,1-dimethylprop-2-ynyl)sulphamoyl]anilino}-4-(1-ethyl-2-methylimidazol-5-yl)pyrimidine; and
2-{4-[*N*-(2-vinyloxyethyl)sulphamoyl]anilino}-4-(1-ethyl-2-methylimidazol-5-yl)pyrimidine;
or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

6. A compound of formula (I) according to claim 1 which is a compound of formula (IC), or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

7. A compound of formula (IC) according to claim 6, or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof; wherein

R^1 is hydrogen, 2-methoxyethyl, methyl, 2-ethoxyethyl, 2-isopropoxyethyl, 2-propoxyethyl, 2-(cyclopropylmethoxy)ethyl, 3-(*t*-butoxy)propyl, 3-[2-(2-ethoxyethoxy)ethoxy]propyl, 3-(2-methoxyethoxy)propyl, carboxymethyl, *t*-butoxycarbonylmethyl, 2-hydroxyethyl, 2-(*N*-methylpyrrolidin-2-yl)ethyl, *N*-ethylpyrrolidin-2-ylmethyl, 2-pyrrolidin-1-ylethyl, 2-morpholinoethyl, 3-morpholinopropyl, *N*-benzylpiperidin-4-yl, 2-piperdin-1-ylethyl, 2-dimethylaminoethyl, 2-diethylaminoethyl or methoxycarbonylmethyl; and

R^2 is hydrogen or bromo;

provided that when R^1 is 2-methoxyethyl R^2 is not hydrogen.

8. A compound of formula (IC) selected from:

4-(1-isopropyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-ethoxyethyl)sulphamoyl]anilino} pyrimidine;

4-(1-isopropyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-isopropoxyethyl)sulphamoyl]anilino} pyrimidine;

4-(1-isopropyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-propoxyethyl)sulphamoyl]anilino} pyrimidine;

4-(1-isopropyl-2-methylimidazol-5-yl)-2-(4-{*N*-[2-(cyclopropylmethoxy)ethyl]sulphamoyl} anilino)pyrimidine; and

4-(1-isopropyl-2-methylimidazol-5-yl)-2-{4-[*N*-(methyl)sulphamoyl]anilino} pyrimidine;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

9. A compound of formula (I) according to claim 1 which is a compound of formula (ID), or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

10. A compound of formula (ID) according to claim 9, or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof; wherein

R^1 is cyclopropyl, 2-methoxyethyl, 2-ethoxyethyl or tetrahydrofur-2-ylmethyl;

R^2 is hydrogen; and

R^3 is ethyl, propyl or isopropyl.

11. A compound of formula (ID) selected from:

4-(1-isopropylimidazol-5-yl)-2-{4-[*N*-(cyclopropyl)sulphamoyl]anilino}pyrimidine;

4-(1-isopropylimidazol-5-yl)-2-{4-[*N*-(tetrahydrofur-2-ylmethyl)sulphamoyl]anilino} pyrimidine;

4-(1-propylimidazol-5-yl)-2-{4-[*N*-(2-methoxyethyl)sulphamoyl]anilino}pyrimidine;

4-(1-ethylimidazol-5-yl)-2-{4-[*N*-(2-methoxyethyl)sulphamoyl]anilino}pyrimidine; and

4-(1-isopropylimidazol-5-yl)-2-{4-[*N*-(2-methoxyethyl)sulphamoyl]anilino}pyrimidine;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

12. A compound of formula (I) according to claim 1 which is a compound of formula (IE), or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

13. A compound of formula (IE) according to claim 12, or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof; wherein

R^1 is hydrogen or 2-methoxyethyl;

R^2 is fluoro;

p is 1;

R^3 is hydrogen; and

R^4 is methyl.

14. A compound of formula (IE) selected from:

2-{4-[*N*-(2-methoxyethyl)sulphamoyl]-2-fluoroanilino}-4-(1,2-dimethylimidazol-5-yl)pyrimidine; and

2-(4-sulphamoyl-2-fluoroanilino)-4-(1,2-dimethylimidazol-5-yl)pyrimidine;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

15. A compound of formula (I) according to claim 1 which is a compound of formula (IF), or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

16. A compound of formula (IF) according to claim 15, or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof; wherein

R^1 is methyl, 3-dimethylaminopropyl, 3-methoxypropyl, 3,3,3-trifluoropropyl, butyl, benzyl, tetrahydrofur-2-ylmethyl, 3-ethoxypropyl or 3-morpholinopropyl;

p is 0;

R^3 is hydrogen or bromo;

R^4 is isopropyl; and

R^5 is methyl.

17. A compound of formula (IF) selected from:

4-(1-isopropyl-2-methylimidazol-5-yl)-2-(4-mesylanilino)pyrimidine;

4-(1-isopropyl-2-methylimidazol-5-yl)-2-[4-(tetrahydrofur-2-ylmethylsulphonyl)anilino] pyrimidine;

4-(1-isopropyl-2-methylimidazol-5-yl)-2-[4-(3-ethoxypropylsulphonyl)anilino]pyrimidine;

4-(1-isopropyl-2-methylimidazol-5-yl)-2-[4-(3-methoxypropylsulphonyl)anilino]pyrimidine; and

4-(1-isopropyl-2-methylimidazol-5-yl)-2-[4-(3-*N*,*N*-dimethylaminopropylsulphonyl)anilino] pyrimidine;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

18. A compound of formula (I) according to claim 1 which is a compound of formula (IG), or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

19. A compound of formula (IG) according to claim 18, or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof; wherein

R^1 is 2-methoxyethyl, 2-ethoxyethyl or cyclopropyl;

p is 0;

R^3 is hydrogen; and

R^4 is n-propyl or isobutyl.

20. A compound of formula (IG) selected from:

4-(1-propyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-ethoxyethyl)sulphamoyl]anilino}pyrimidine;

4-(1-propyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-methoxyethyl)sulphamoyl]anilino} pyrimidine;

4-(1-propyl-2-methylimidazol-5-yl)-2-{4-[*N*-(cyclopropyl)sulphamoyl]anilino}pyrimidine;

4-(1-isobutyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-methoxyethyl)sulphamoyl]anilino} pyrimidine; and

4-(1-isobutyl-2-methylimidazol-5-yl)-2-{4-[*N*-(2-ethoxyethyl)sulphamoyl]anilino}pyrimidine;

or a pharmaceutically acceptable salt or an *in vivo* hydrolysable ester thereof.

21. A pharmaceutical composition which comprises a compound of formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, in association with a pharmaceutically-acceptable diluent or carrier.

22. A compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, for use in a method of treatment of the human or animal body by therapy.

23. A compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, for use as a medicament.

24. The use of a compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, in the manufacture of a medicament for use in the production of a cell cycle inhibitory (anti-cell-proliferation) effect in a warm-blooded animal such as man.

25. The use of a compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, in the manufacture of a medicament for use in the treatment of cancers (solid tumours and leukaemias), fibroproliferative and differentiative disorders, psoriasis, rheumatoid arthritis, Kaposi's sarcoma, haemangioma, acute and chronic nephropathies, atheroma, atherosclerosis, arterial restenosis, autoimmune diseases, acute and chronic inflammation, bone diseases and ocular diseases with retinal vessel proliferation.

26. The use of a compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, in the manufacture of a medicament for use in the treatment of cancer.

27. The use according to claim 26 wherein the cancer is selected from leukaemia, breast cancer, lung cancer, colorectal cancer, stomach cancer, prostate cancer, bladder cancer, pancreatic cancer, ovarian cancer, liver cancer, kidney cancer, skin cancer and cancer of the vulva.

28. A compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, for use in the production of a cell cycle inhibitory (anti-cell-proliferation) effect in a warm-blooded animal such as man.

29. A compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, for use in the treatment of cancers (solid tumours and leukaemias), fibroproliferative and differentiative disorders, psoriasis, rheumatoid arthritis, Kaposi's sarcoma, haemangioma, acute and chronic nephropathies, atheroma, atherosclerosis, arterial restenosis, autoimmune diseases, acute and chronic inflammation, bone diseases and ocular diseases with retinal vessel proliferation.

30. A compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, for use in the treatment of cancer.

31. A compound of the formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, for use in the treatment of leukaemia, breast cancer, lung cancer, colorectal cancer, stomach cancer, prostate cancer, bladder cancer, pancreatic cancer, ovarian cancer, liver cancer, kidney cancer, skin cancer and cancer of the vulva.

32. The use of a compound of formula (I), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, according to any one of claims 1-20, in the manufacture of a medicament for use in preventing hair loss arising from the treatment of malignant conditions with pharmaceutical agents.